

# Office of Environmental Health Hazard Assessment



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## MEMORANDUM

**TO:** Terry Tamminen  
Agency Secretary

**FROM:** Joan E. Denton, Ph.D.  
Director

**DATE:** August 2, 2004

**SUBJECT:** ADOPTION OF UNIT RISK VALUE FOR NAPHTHALENE

In accordance with Health and Safety Code, Section 44300 *et seq.* (The Air Toxics Hot Spots Information and Assessment Act, AB 2588, Connelly as amended by SB 1731, Calderon), the Office of Environmental Health Hazard Assessment (OEHHHA) hereby adopts a unit risk value for naphthalene of  $3.4 \times 10^{-5} (\mu\text{g}/\text{m}^3)^{-1}$  and slope factor of  $1.2 \times 10^{-1} (\text{mg}/\text{kg}\cdot\text{day})^{-1}$ . These values are based on data for incidence of nasal respiratory epithelial adenoma and nasal olfactory epithelial neuroblastoma in male rats. They are to be used in the Air Toxics Hot Spots and Toxic Air Contaminant (TAC) programs for estimating the cancer risk associated with inhalation exposures to naphthalene. The attached document, which has undergone public and peer review, and was approved by the Scientific Review Panel for Toxic Air Contaminants, describes the derivation of these values.

Naphthalene is a common air pollutant; it is an industrial intermediate and a component of some fuels, and is produced by combustion of hydrocarbon fuels. Naphthalene is already identified as a TAC as a result of its listing as a U.S. Hazardous Air Pollutant. For assessment of non-cancer effects, a Chronic Reference Exposure Level was adopted in 2000. Naphthalene was listed as a chemical known to the State of California to cause cancer on April 19, 2002, and was classified as Group 2B (possibly carcinogenic to humans) by the International Agency for Research on Cancer in 2002. A recent study (NTP, 2000) in rats was found to show *clear evidence* of a carcinogenic effect, resolving the previous uncertainties and upgrading the body of data available to a level that allows satisfactory cancer risk assessment. Accordingly, and in view of the importance of naphthalene as an air pollutant, OEHHHA has developed a cancer unit risk value for use in the Hot Spots and TAC programs.

Terry Tamminen

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The document consists of two parts. A toxicity summary is provided, which forms an addendum to OEHHA's Part II Technical Support Document for the Air Toxics Hot Spots program. An introductory section provides background information on naphthalene toxicity, emissions and regulatory treatment, beyond what is contained in the toxicity summary in the Technical Support document.